Claims

What is claimed is:

1. A method of processing a circuit board having one or more optical waveguides associated therewith, the method comprising the steps of:

providing one or more etch stop layers in proximity to the one or more waveguides, at least one of the etch stop layers comprising one or more fiducials therein; and

from a surface of the circuit board, using the one or more etch stop layers to selectively remove material to provide openings having a defined positioning and depth in the circuit board.

2. The method of claim 1, wherein one or more of the fiducials define a positioning in a plane of the circuit board.

3. The method of claim 1, wherein one or more of the etch stop layers define a depth in the circuit board.

4. The method of claim 1, wherein at least one of the openings exposes at least a portion of the one or more waveguides.

5. The method of claim 1, wherein one or more of the etch stop layers acts as a selective etch stop.

6. The method of claim 1, wherein one or more of the etch stop layers acts as a complete etch stop.

7. The method of claim 1, wherein one or more of the etch stop layers comprises a metal.

8. The method of claim 7, wherein the metal is selected from the group consisting of copper, molybdenum, gold and combinations comprising at least one of the foregoing metals.

9. The method of claim 1, wherein one or more of the etch stop layers comprises a reflective dielectric thin film.

10. The method of claim 1, wherein the material removed comprises a substrate material.

11. The method of claim 10, wherein the substrate material is selected from the group consisting of glass, organic material, flexible organic material, polyimide and combinations comprising at least one of the foregoing substrate materials.

12. The method of claim 1, wherein the material is selectively removed using laser ablation techniques.

13. The method of claim 12, wherein the laser ablation techniques comprise use of a carbon dioxide laser.

14. The method of claim 1, wherein at least a portion of the material is selectively removed using reactive ion etching.

15. The method of claim 1, wherein one or more of the openings serve as one or more reference points to align at least one optical component with the one or more waveguides.

16. The method of claim 15, wherein the at least one optical component comprises one or more alignment pins each having a shape that corresponds with one or more of the openings.

17. The method of claim 16, wherein the alignment pins are circular.

18. The method of claim 15, wherein the at least one optical component is selected from the group consisting of opto-electronic modules, lenses, turning mirrors and combinations comprising at least one of the foregoing optical components.

19. The method of claim 1, wherein one or more of the openings serve as one or more reference points to align at least one receptacle for an optical component with the one or more waveguides.

20. The method of claim 1, wherein the circuit board has two or more waveguides associated therewith.

21. A circuit board having one or more optical waveguides associated therewith, comprising one or more openings each with a positioning and depth defined using one or more etch stop layers located in proximity to the one or more waveguides, at least one of the etch stop layers comprising one or more fiducials therein.

22. The circuit board of claim 21, wherein one or more of the fiducials define a positioning in a plane of the circuit board.

23. The circuit board of claim 21, wherein one or more of the etch stop layers define a depth in the circuit board.